2/2 009

CIRC ACCESSION NO--AP0103439

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 5.AMYL.2. PYRROLIDINONE, 5,HEXYL,2,PYRROLIDINONE, AND TO A LESSER EXTENT, 5,PROPYL,2,PYRROLIDINONE, 5,ISOBUTYL,2,PYRROLIDINONE, 5,ISOAMYL,2,PYRROLIDINONE, 5,HEPTYL,2,PYRROLIDINONE, AND 5,NONYL,2,PYRROLIDINONE ADMINISTERED I.P. INTO GUINEA PIGS, RABBITS, AND RATS AT 15, 30, 50, OR 100 MG-KG INHIBITED THE DEVELOPMENT OF HYPERTHERMIA AND DELAYED DIURESIS FOR 2 HR, PROBABLY DUE TO INHIBITION OF THE NEUROHYPOPHYSIS.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002201810018-8"

1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EFFECT OF THE NATURE OF INDIFFERENT ELECTROLYTE ANIONS DURING THE CATALYTIC LIBERATION OF HYDROGEN AT THE MERCURY ELECTRODE -U-

AUTHOR-(03)-MAYRANOVSKIY, S.G., GULTYAY, V.P., LISITSINA, N.K.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(4), 541-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--METAL ELECTRODE, ELECTROLYTE, HYDROGEN, SULFATE, ADSORPTION, NITRATE, SULFATE, BROMIDE, CHLORIDE, POLAROGRAPHIC ANALYSIS, QUININE, POTASSIUM CHLORIDE, POTASSIUM BROMIDE, POTASSIUM NITRATE, POTASSIUM IODIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/1126 STEP NO--UR/0364/70/006/004/0541/0547

CIRC ACCESSION NO--AP0121685

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 025

CIRC ACCESSION NO--AP0121685

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE ANION (FROM K SUB2 SO SUB4, KNO SUB3, KI, KBR, OR KCL) ON THE CATALYTIC POLAROGRAPHIC WAVE OF H, PRODUCED BY 3 TIMES 10 PRIME NEGATIVE 5 M QUININE IN 0.05 N H SUB2 SO SUB4 SOLN., WAS STUDIED AT 25DEGREES. THE LIMITING CURRENT INCREASED AND THE E SUBONE HALF SHIFTED TO MORE NEG. POTENTIALS WITH INCREASING CONCN. OF THE SALT AND THE INDICATED EFFECT INCREASED IN THE ORDER CLNEGATIVE LESS THAN BRNEGATIVE LESS THAN INEGATIVE LESS THAN NO SUB3NEGATIVE LESS THAN SO SUB4 PRIME2NEGATIVE. THESE CHANGES WERE PRIMARILY DUE TO THE CHANGE IN THE ACID BASE PROPERTIES (PK SUBA) OF QUININE AND SECONDARILY TO THE CHANGE IN THE ADSORPTION OF QUININE AT THE HG ELECTRODE. (THE ADSORPTION OF QUININE DECREASED IN THE SEQUENCE NO SUB3NEGATIVE GREATER THAN OR EQUAL TO SO SUB4 PRIME2NEGATIVE GREATER THAN CLNEGATIVE GREATER THAN BRNEGATIVE). FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr. AP0038569 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code UK 0000

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67362z Molecular weight distribution of polyolefins. Belov, H. P.; Lisitskaya, A. P.; Solov'eva, T. I.; Chirkov, N. M. (Inst. Chem. Phys., Moscow, USSR). *Eur. Polym. J.* 1970, 6(1), 29-40 (Eng). Mol. wt. distributions of polyethylene and ethylene-propylene copolymers prepd. with Ziegler-Natta catalysts were studied by pptn. fractionation. The mol. wt. distribution in polyethylene prepd. in the presence of a sol. catalytic system, $(C_5H_5)_2TiCl_2$-Et_2AlCl was bimodal owing to the existence of two types of active centers. The effects of polymn. time, catalyst and solvent natures, and presence of propylene in the ethylene on mol. wt. distribution were investigated. The fractionation results were correlated with the kinetic data on ethylene polymn. The possible mechanism of ethylene polymn. in an alkyl halide medium in the presence of $(C_5H_5)_2TiCl_2$-Et_2AlCl was discussed with respect to the data on mol. wt. distributions. RCDL

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REEL/FRAME
19731748

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UNCLASSIFIED PROCESSING DATE--13NOV70

1/2 013

TITLE--EFFECT OF POLYVITAMINS ON THE ADRENAL CORTEX -U-

AUTHOR-(02)-SVECHNIKOVA, N.V., LISITSKAYA, R.G.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 5, PP 44-47

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ADRENAL CORTEX, VITAMIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1730 STEP NO--UR/0475/70/000/005/0044/0047

CIRC ACCESSION NO--AP0129098

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 013

CIRC ACCESSION NO--AP0129098

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ELDERLY AND OLD PERSONS COURSES OF THE VITAMIN COMPLEX "VIGERIN" HAD A POSITIVE EFFECT OF THE FUNCTIONAL STATE OF THE ADRENALS NORMALIZING ITS ANDROGNEIC AND GLUCOCORTICOID FUNCTIONS. PROLONGED COURSES OF TREATMENT LEAD TO AN INCREASE OF THE URINARY AND PLASMA CONTENT OF 17,OXYCORTICOSTEROIDS. IT IS CONCLUDED THAT PERSONS OVER 60 YEARS OF AGE SHOULD BE ADVISED TO TAKE COURSES OF VITAMIN THERAPY. DOSAGE AND NUMBER OF COURSES ARE GIVEN.

FACILITY: INSTITUTA GERONTOLOGII AMN SSSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--ELECTRICAL CONDUCTIVITY OF IRON AND IRON CARBON MELTS -U-

AUTHOR-(03)-ARSENTYEV, P.P., FILIPPOV, S.I., LISITSKIY, B.S.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(3), 18-22

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ELECTRIC CONDUCTIVITY MEASUREMENT, ALLOY MELTING, IRON ALLOY, LIQUID METAL PROPERTY, CARBON, ALLOY COMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0838 STEP NO--UR/0148/70/013/003/0018/0022

CIRC ACCESSION NO--AT0132928

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132928

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN APP. IS DESCRIBED FOR THE DETN. OF ELEC. COND. OF MELTED FE AND FE ALLOYS. THE ELEC. CONDS. OF FE (C 0.23, SI 0.005, MN TRACES, S 0.012, P 0.005, AND O 0.015 WT. PERCENT) WERE DONE IN THE RANGE 1400 TO 1600-50DEGREES (SOLID FE). DURING THE MELTING OF FE THERE OCCURRED A SMALL INCREASE OF ELEC. COND.; THE RATIO FO ELEC. RESISTANCE FOR FE SUBLIQ. TO THAT OF FE SUBSOLID EQUALS 1.060. THIS INDICATES THAT THE ELECTRON STRUCTURE IN MOLTEN FE IS ABOUT THE SAME AS IN SOLID FE. THE SP. RESISTANCE OF MOLTEN FE AT THE M.P. WAS 135.1 MICROOHM-CM. THE TEMP. DEPENDENCE WAS DESCRIBED BY AN EQUATION. FOR THE SOLID FE A SIMILAR EQUATION WAS DEVELOPED. THE ELEC. RESISTANCE OF FE-C ALLOY WAS DETD. IT IS ASSUMED THAT FEOC ALLOYS CONSIST IN 2 DIFFERENT STATES. THE FAIRLY HIGH INCREASE OF ELEC. RESISTANCE WITHIN THE RANGE 0.2-0.4PERCENT INDICATES THAT C IS PRESENT AT A CATION, WHILE GREATER THAN 0.4PERCENT C THE FE-C SOLID SOLN. EXISTS WITH A DIFFERENT STRUCTURE OF SHORT ORDER, SIMILAR TO GAMMA SOLN. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 534.852

LISITSYN, A. L., Institute of Biological Physics, Academy of Sciences of the USSR

"A Two-Channel Device for Magnetic Recording and Playback With Pulse-Duration Modulation"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 26, 1970, Soviet Patent No 278768, Class 21, filed 8 May 69, p 41

Abstract: This Author's Certificate introduces a device for magnetic recording and playback with pulse-duration modulation. The unit contains a modulator, differentiating circuit, amplifiers and magnetic heads. As a distinguishing feature of the patent, the frequency range for data recording is extended by connecting the input of each of the channels through its own rectifier to the common differentiating circuit, while the output of each channel is connected through the corresponding shaper to an adder which is connected to the demodulator through a trigger circuit.

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UDC 615.475:612-087

USSR

GULYAYEV, A. I., LISITSYN, A. I., POPOV, L. A., Institute of Biological Physics, Academy of Sciences of the USSR

"A Program Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 3, 1970, p 128, patent No 260284, filed 15 Nov 68

Abstract: This Author's Certificate introduces a program device which contains a reading unit, cadence pulse generator, tracker, comparison circuit, coincidence circuit and synchropulse counter, the comparison circuit being connected to the synchropulse counter. As a distinguishing feature of the patent, in order to improve the precision of time intervals in the program, the device has a time register connected to the reading unit and the coincidence circuit, and a second comparison circuit connected to the first. The first comparison circuit is connected to the time register and to the synchropulse counter, and the coincidence circuit is also connected to the cadence pulse generator.

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UNCLASSIFIED PROCESSING DATE--20NOV70

1/2 018

TITLE--A PROGRAM DEVICE -U-

AUTHOR-(03)-GULYAYEV, A.I., LISITSYN, A.I., POPOV, L.A.

COUNTRY OF INFO--USSR

SOURCE--PATENT NO 260284, FILED 15 NOV 68

REFERENCE--MOSCOW, OTKRYTIYA, IZOBRETENIYA, PROMYSHLENNYYE OBRAZTSY,

DATE PUBLISHED--------70

SUBJECT AREAS--METHODS AND EQUIPMENT, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--PATENT, PULSE GENERATOR, COMPARATOR CIRCUIT, COINCIDENCE CIRCUIT, TIME INTERVAL COUNTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0731 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126441

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0126441

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS AUTHOR'S CERTIFICATE INTRODUCES A PROGRAM DEVICE WHICH CONTAINS A READING UNIT, CADENCE PULSE GENERATOR, TRACKER, COMPARISON CIRCUIT, COINCIDENCE CIRCUIT AND SYNCHROPULSE COUNTER, THE COMPARISON CIRCUIT BEING CONNECTED TO THE SYNCHROPULSE COUNTER. AS A DISTINGUISHING FEATURE OF THE PATENT, IN ORDER TO IMPROVE THE PRECISION OF TIME INTERVALS IN THE PROGRAM, THE DEVICE HAS A TIME REGISTER CONNECTED TO THE READING UNIT AND THE COINCIDENCE CIRCUIT, AND A SECOND COMPARISON CIRCUIT CONNECTED TO THE FIRST. THE FIRST COMPARISION CIRCUIT IS CONNECTED TO THE TIME REGISTER AND TO THE SYNCHROPULSE COUNTER, AND THE COINCIDENCE CIRCUIT IS ALSO CONNECTED TO THE CADENCE PULSE GENERATOR. FACILITY: INSTITUT BIOLOGICHESKOY FIZIKI AN SSSR.

UNCLASSIFIED

USSR

UDC: 66.074.7:546.432:541.46

KUZNETSOV, Yu. V., YELIZAROVA, A. N., LISITSYN, A. P., FAYZULLIN, F. Z.

"Concerning the Part Played by Ion Exchange in Precipitation of Radium From Sea Water"

Leningrad, Radiokhimiya, Vol 14, No 3, 1972, pp 441-446

Abstract: An investigation was undertaken to determine the extent to which ion exchange is responsible for the accumulation of ^{226}Ra in sediment. Simultaneous direct determinations were made of the absolute concentrations of ^{226}Ra in samples of bottom sediments taken from the Southern and Central sections of the Indian Ocean and from the equatorial section of the Pacific Ocean. The cation-exchange capacity of the same specimens was determined by two independent methods. Analysis of the results shows a direct relationship between cation-exchange capacity of ocean sediments and the ^{226}Ra concentration in these sediments.

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USSR

UDC 539.3.01

BOROVSKIY, P. V., VERIZHENKO, Ye. P., LISITSYN, B. M.

"Automation of the Solution of Certain Classes of Three- and Two-Dimensional Problems in Elasticity Theory"

Soprotivl. materialov i teoriya sooruzh. Resp. mezhved. nauch.-tekhn. sb. (Resistance of Material and the Theory of Structures. Republic Interdepartmental Scientific-Technical Collection), 1972, No. 18, pp 3-7 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V25)

Translation: The basic elements of a universal algorithm for the approximate analytical computer solution of three-dimensional problems in elasticity theory with a high degree of automation are discussed. The basic algorithm is the defining states method which makes it possible to apply the algorithm in solving a wide range of boundary value problems. The algorithm is considered applicable to a mixed three-dimensional problem for a body having the shape of a rectangular parallelepiped. Authors' abstract.

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Military Medicine

USSR

VISHNEVSKIY, A., Col Gen Med Ser Member of the USSR Academy of Medical Sciences, Professor; SHRAYBER, M., Maj Gen Med Serv, Professor; and LISITSYN, K., Col Med Serv, Professor

"Military-Field Surgery"

Moscow, Krasnaya Zvezda, 12 May 71, p 4

Abstract: The scientific technical revolution has brought great advances in military medicine, especially in the USSR. Blood transfusion was an early advance in the treatment of wounds and shock. Methods of quick freezing blood have been developed. Specialized substances are also made from blood. Scientists are now working on a completely artificial blood substitute to perform all of the functions of blood. New antibiotics are being created. The creation of artificial organs such as kidneys is also important. An apparatus for blood circulation is being used in operations and to assist weak hearts and lings. Metal support pins are used to reinforce broken bones. Specialists are testing a type of adhesive for bones, and ultrasonic methods have been developed. There have been great advances in the treatment of burns. Skin transplants are among the most important methods. A special instrument called a dermatom is used here. Work is also being done on trans-

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VISHNEVSKIY, A., et al., Krasnaya Zvezda, 12 May 71, p 4

planting tissues and organs. The stitching of wounds and operations is being automated. New types of local and general anesthetics, and artificial methods of maintaining breathing and blood circulation have also appeared. Electronics, especially new x-ray and television equipment, is also changing medicine.

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1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--THE CENTRALIZED SYSTEM OF MANAGEMENT -U-

AUTHOR--LISITSYN, V.

COUNTRY OF INFO--USSR

SOURCE--TRUD, JUNE 25, 1970, P 3, COLS 1-3

DATE PUBLISHED--25JUN70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--GOVERNMENT ECONOMIC CONTROL, R AND D CONSULTATION, ECONOMIC SYSTEM, INDUSTRIAL MANAGEMENT, ECONOMIC ORGANIZATION, R AND D PLANNING ORGANIZATION, GOVERNMENT CENTRALIZATION POLICY, DESIGN BUREAU, SCIENTIFIC INSTITUTE, R AND D ORGANIZATION STRUCTURE, R AND D FACILITY MANAGEMENT, DESIGN FACILITY R AND D MANAGEMENT, LABOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/1173 STEP NO--UR/9025/70/000/000/0003/0003

CIRC ACCESSION NO--AN0110826

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AN0110826

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR BELIEVES THAT THE TIME IS RIPE FOR THE ESTABLISHMENT OF A CENTRALIZED STATE SYSTEM FOR ADVANCING THE ECONOMIC MANAGEMENT OF THE COUNTRY. HE ADVOCATES THE ESTABLISHMENT OF DEPARTMENTS OF RATIONALIZATION (IMPROVEMENT) AT INDUSTRIAL RESEARCH INSTITUTES AND INDEPENDENT TERRITORIAL AND INTERINDUSTRIAL INSTITUTIONS CAPABLE OF DOING CONSULTING WORK IN THE AREAS OF MANAGEMENT IMPROVMENT. LISTSIN ILLUSTRATES HIS POINT BY CITING THE WORK DIRECTED AT IMPROVING THE STRUCTURE OF MACHINE CONSTRUCTION PLANTS. THIS PROGRAM HAS BEEN INITIATED BY THE PARTY ORGANIZATIONS OF MOSCOW AND LENINGRAD. NEARLY 20 MINISTRIES, HUNDREDS OF PLANTS, AND ALMOST 40 DESIGN PLANNING AND RESEARCH INSTITUTES ARE PARTICIPATING IN THIS PROGRAM. THE REALIZATION OF THE DEVELOPED PLANS 10-15 YEARS FROM NOW WILL MAKE IT POSSIBLE TO BOOST THE LABOR PRODUCTIVITY BY APPROXIMATELY 3 TO 3.5 TIMES.

UNCLASSIFIED

USSR

UDC 536.46:533.6

LISITSYN, V. I., PIROZHENKO, A. A., VILYUNOV, V. N.

"On the Induction Period in the Combustion of a Disperse System"

V sb. Goreniye i vzryv (Combustion and Explosion -- Collection of Works), Moscow, "Nauka", 1972, pp 186-190 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B934)

Translation: Criteria for the applicability of a steady-state heat transfer coefficient to describe heat exchange between particles and a gas are discussed. Quasistationary representations of the course of inert (from radiation) and chemical heating are proposed on the basis of an analysis of combustion by a flow of radiant energy. Temperature profiles of both stages are matched with an accuracy up to the continuity of the first derivatives. It is possible for the process to occur in combustion regimes only by combustion when heat losses deep in the cold layers are inconsiderable. The time for the conversion of the surface from a heat source into an outlet is determined by the incandescent surface in ignition regimes. The curvature of the surface has no effect on

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USSR

LISITSYN, V. I., et al, Goreniye i vzryv, Moscow, "Nauka", 1972, pp 186-190

processes in the chemical boundary layer and takes on important meaning for the heating zone: critical conditions are shown. The agreement between computer calculations and the approximate calculations is satisfactory in both regimes. 7 ref. Authors' abstract.

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USSR

UDC: 535.34

ZAVADOVSKAYA, Ye. K., LISITSYN, V. M., BARANOV, A. I., FEDOROV, V. A., STEPANOV, V. G., Tomsk Polytechnical Institute imeni S. M. Kirov

"Radiation-Induced Transformation of Defects in CaF_2, SrF_2, and BaF_2"

Tomsk, Izvestiya VUZov: Fizika, No 2(129), 1973, pp 110-112

Abstract: The paper presents the results of an investigation of radiation-stimulated processes of transformation of defects in fluorides of alkali-earth metals. The crystals were grown from purified natural fluorides and also from synthesized, chemically pure salts. The crystals were subjected to electron bombardment at 1-1.8 MeV at room temperature and also in a stream of low-temperature plasma at an air pressure of 1-2 mm Hg. The EPR spectra were measured at room temperature on a Thomson-251 spectrometer. It is found that radiation in these crystals converts simple electron defects with active participation of holes to radiation-stable and heat-stable defects. The greatest effect of the radiation-stimulated processes is observed in CaF_2.

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USSR

UDC: 539.293:548.4

OVCHAROV, A. T., KALININ, M. I., and LISITSYN, V. M.

"Kinetics of the Radiation Change in Crystal Density"

Tomsk, Izvestiya VUZ--Fizika, No 6, 1972, pp 139-141

Abstract: This brief communication gives the results of an investigation into the radiation change in the density of CaF_2 crystals and the kinetics of the growth of their absorption band after irradiation by protons. The purpose of the investigation is to study the kinetics of characteristic defect accumulation and find the absorption bands resulting from these defects in the crystal lattice. The CaF_2 crystals used in the experiments described in this communication were grown at the Leningrad Optical Glass Plant and subjected to proton irradiation at an energy of 4.5 Mev and at room temperature. An earlier paper written by the authors named above (Ye. K. Zavodskaya et al, Izvestiya VUZ USSR--Fizika, No 9, 1969, p 155) describes the method of measuring the crystal density, known as the flotation method; the absorption spectra were measured by an SF-4A spectrophotometer in the 215-1200 nm range. The authors are associated with the S. M. Kirov Polytechnical Institute at Tomsk.

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USSR

UDC 621.396.677.7

DUPLENKOV, D. A. and LISITSYN, V. P.

"Emission From the Open End of a Rectangular Waveguide Into a Uniform, Plasma Half-Space"

Tr. Mosk. energ. in-ta (Works of the Moscow Power Engineering Institute), 1972, vyp. 119, pp 16-24 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 B44)

Translation: A formula is obtained for the normalized conductivity of a radiating aperture in single-mode approximation. This formula is used for calculating the parameters of a waveguide unit where the unit is designed to be used in the diagnosis of plasma. Original article: five illustrations and five bibliographic entries. N.S.

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USSR UDC 621.378.3

BRAZOVSKIY, V. Ye., LISITSYN, V. N., and TELEGIN, G. G.

"Some Peculiarities of Transition Processes in a He-Ne Laser at $\lambda = 0.63$ μ"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 17, No 5, 1972, pp 879-880

Abstract: Some peculiarities in the transition processes of a He-Ne laser operating with a wavelength of 0.63 microns are discussed. They were observed during weak modulation of the discharge current by square pulses, with a constant current of 8 ma maintaining the discharge in a tube measuring 350 mm long with an inner diameter of 3.5 mm. The experiment described in this paper consisted of observing the form of the generated pulses as a function of the partial pressures in the tube. With the Ne pressure held constant, the He pressure was varied from 0.8 to 2 mm Hg. Oscillograms of three pulse shapes corresponding to He pressures of 1.8 and 2.0 and an Ne pressure of 0.06 mm Hg are obtained. High transition process times were observed in experiments investigating transient process statistics.

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USSR

UDC 621.375.9 : 535

BETEROV, I. M., LISITSYN, V. N., and CHEBOTAYEV, V. P.

"Saturation and Mode Selection Phenomena in He-Ne Lasers. I"

Leningrad, Optika i Spektroskopiya, No. 5, May 71, pp 932-939

Abstract: Two approaches to solving the problem of selecting types of oscillations in gas lasers are analyzed. The first approach consists of a modification of the optical resonator of the laser such that the condition for generation can be satisfied for only one type of oscillation. The complications in the design of various types of resonators make practical work with such lasers quite difficult and require the application of additional systems for self-tuning to maintain a stable frequency and amplitude in the output radiation and require constant control of the frequency of the radiation spectrum, especially with respect to transverse types of higher-order oscillations. Particular difficulties arise if smooth frequency tuning of the radiation over wide limits is necessary. The second approach is less obvious and consists of using the saturation characteristics of amplification and absorption in gases under the action of a strong monochromatic

USSR

PETEROV, I. M., et al, Optika i spektroskopiya, No. 5, May 71, pp 932-939

field. In a previous article, the authors describe the operation of a $\lambda = 0.63$ μ He-Ne laser in which there was effective selection of the types of oscillations with the aid of the absorbing cell introduced into the resonator. This new selection method is based on the use of the absorption property to be saturated effectively under the action of a strong electromagnetic field. The first section of the article presents general principles for the selection of types of oscillations, the practical achievement of which leads to the development of a single-frequency laser with nonlinear absorption; the experimental setup and the basic experimental results as to both selection of types of oscillations and to the physical phenomena accompanying the operation of a strong He-Ne laser with an absorbing cell in the resonator are described. The second part of the work presents a more rigorous examination of selection of types of oscillations, and the results of experiments are discussed. A selection mode of types of oscillations in a laser with essentially nonhomogeneously amplified lines in the absence of any selecting elements is discussed. The homogeneity of saturation of the amplifying medium which occurs in a strong electromagnetic field is used in the method. The effect of collisions and capture of resonance radiation both in the amplifying medium and in the absorbing cell is also discussed from the aspect of selection of types of oscillations.

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USSR

UDC 537.525.1

VASILENKO, L. S., LISITSYN, V. N., NOTKIN, G. YE., and CHEBOTAYEV, V. P.

"Disintegration of the 2^1P and 2^3P Levels of He in a Glow Discharge"

Leningrad, Optika i Spektroskopiya, Vol 28, No 6, Jun 70, pp 1085-1093

Abstract: The article describes results of a study of the cross-sections for the disintegration of the 2^1P and 2^3P levels of helium in a dc discharge by atomic collisions. The purpose was to ascertain the channel over which excitation transfer from singlet levels to triplet levels occurs. The study was based on the method of selective optical excitation. It was found that the levels 2^1P and 2^3P of He have a cross-section for disintegration by interatomic collisions of $< 10^{-16}$ sq cm. A study of the magnitude and sign for the modulation of the population of a number of levels, resulting from selective optical excitation of the level 2^1P, indicates the following general pattern for the excitation of helium levels:

USSR

GERASIMOV, F. M., et al., Optika i Spektroskopiya, Vol 28, No 6, Jun 70, pp 1196-1203

a differential. During tests of the ruling engine about 40 diffraction gratings were made with 600, 300, and 200 lines/mm. In most cases the gratings, when studied by the interference method, displayed straight interference fringes and gave high-quality spectral lines in the spectral unit.

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Acc. Nr: AP0053443 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code: UR 0366

110529y Transformation of halogen-containing aromatic compounds in the presence of an organic base. X. Reaction of 8-halo-5-nitro-1-naphthoic acids with piperidine in benzene. Lisitsyn, V. N.; Shulchishin, V. A. (Mosk. Khim.-Tekhnol. Inst. im. Mendeleeva, Moscow, USSR). *Zh. Org. Khim.* 1970, 6(2), 325–9 (Russ). The kinetics were studied of piperidine (I) or piperidine-*1-d* (Ia) with 8-bromo-5-nitro-1-naphthoic acid (II) or its 8-chloro analog (IIa). The reaction is base-catalyzed (Cu salts have no effect) and obeys the equation $dD/dt = k_1(A - x)(B - 2x) + k_2(A - x)(B - 2x)^2$ (D is halide ion concn., A is the initial II or IIa concn., B is the initial I or Ia concn.). The existence of a slight isotope effect suggests that the reaction mechanism involves not only quaternary salt formation, but also H-bonding (or D-bonding). A cyclic intermediate is postulated, which rearranges to the 8-piperidino analog of II.
CPJR

REEL/FRAME
19830468

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CHEMISTRY OF ENYNE ETHERS. II. SYNTHESIS OF PYRAZOLES -U-

AUTHOR-(03)-LISITSYN, YE.A., BLEYAYEVA, A.N., MALEYEVA, A.K.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(3), 439-42

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, CHEMICAL REACTION MECHANISM, SULFONATE, AMINE DERIVATIVE, ACETYLENE, PYRAZOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1683 STEP NO--UR/0366/70/006/003/0439/0442

CIRC ACCESSION NO--AP0112677

UNCLASSIFIED

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002201810018-8"

2/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0112677
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF ROCH:CHC TRIPLE BOND CH (R EQUALS ME OR ET) WITH MENHNH SUB2 .H SUB2 SO SUB4 GAVE A 2.5:2 MIXT. OF 1,3,DIMETHYL PYRAZOLE WITH 1,5,DIMETHYLPYRAZOLE OR A 2:3 MIXT. OF THE CORRESPONDING DIETHYLPYRAZOLES. THE MECHANISM OF THIS REACTION IS DISCUSSED. FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

UDC 669.71.074.2

USSR

FIALKOV, YU. G., BURKAT, V. S., LISITSYNA, N. I.

"Absorption of Hydrogen Fluoride from Aluminum Production Gases in a Hollow High-Speed Scrubber"

Tr. Vses. n.-i. i proyektn. in-ta alyumin., magn. i elektrodn. prom-sti (Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 71, pp 157-167 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G209)

Translation: A study was made of the absorption of HF by a 5% soda solution in a hollow high-speed scrubber at an aluminum plant. The scrubber is a cylindrical unit 1 meter in diameter with evolvent atomizers arranged in three tiers and louvered separators. The basic laws of gas absorption in hollow scrubbers are discussed. The effect of a number of factors on the process is discovered: the arrangement of the atomizers, the gas velocity, and the reflux density. The operation of the scrubbers with reflux of its individual atomizer in different positions is studied. On the basis of this study, the optimal direction of the liquid feed is selected -- upward through the middle and lower atomizers and downward through the upper atomizer. With a reflux density of L = 20 m/hour and three atomizers, this made it possible to obtain

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USSR

FIALKOV, YU. G., et al., Tr. Vses. n.-i. i proyektn. in-ta alyumin., magn. i elektrodn. prom-sti, 1970, No 71, pp 157-167

absorption indexes analogous to the indexes for 30 m/hour and 6 atomizers directed in both directions. The effect of the flow rate of the absorbent on the cleaning efficiency and the absorption coefficient K_V is studied. The dependence of K_V on L is expressed in the form $K_V = AL^x$ where the experimental value of x is 0.46. The effect of the gas velocity W_g was studied within the limits of 2.8-8.0 m/sec; y is defined as equal to 0.96 in the expression $K_V = BW_g^y$. Thus, with an increase in W_g to 8 m/sec, the purification efficiency is almost not reduced. The resistance of the unit for W_g = 8 m/sec and L = 45 m/hour was 65 mm H_2O. The results of the research are generalized in the form of the empirical equation $K_V = 267L^{0.46}W_g^{0.96}$ permitting hollow scrubbers to be calculated under conditions close to the tested ones. There are 5 illustrations.

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USSR

UDC 590.745 Callorhinus:591.511

LISITSYNA, T. Yu., Institute of Animal Evolutionary Morphology and Ecology, USSR Academy of Sciences, Moscow

"Behavior and Acoustic Signals of the Northern Fur Seal (Callorhinus ursinus) in Their Sealing Grounds"

Moscow, Zoologicheskiy Zhurnal, Vol 52, No 8, 73, pp 1220-1228

Abstract: Vocalizations of the northern fur seal (Callorhinus ursinus) were tape recorded on the island of Tyuleniy during August and September 1971. Analysis of the frequencies and amplitudes showed that eight functional signals could be isolated. Four of them belonged to adult males, two to adult females, two to pups (one in common with females), and one to nonbreeders. The males have a barking signal presumably used for sexual identification; vocalizations employed for individual identification were highly specific. A common threatening vocalization employed in protecting territorial (sealing) grounds was found to be common for nonbreeders, bulls protecting harems, and nursing females.

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1/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--MINERAL FORMATION IN KIMBERLITES AT THE EXPERIMENTAL CONDITIONS OF HIGH PRESSURES AND TEMPERATURES -U-

AUTHOR--DAVYDCHENKO, A.G., LISITSYNA, YE.YE., BEZRUKOV, G.N., GORKHOV, S.S.

COUNTRY OF INFO--USSR

SOURCE--GEOLOGIYA I GEOFIZIKA, 1970, NR 1 (121), PP 129-135

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--MINERAL FORMATION ANALYSIS, HIGH TEMPERATURE, HIGH PRESSURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0880 STEP NO--UR/0210/70/000/001/0129/0135

CIRC ACCESSION NO--AP0104316

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104316

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KIMBERLITE FROM THE MIR PIPE WAS UNDERGONE BY THE EFFECT OF HIGH TEMPERATURES (UP TO 1400-1500DEGREESC) AT THE PRESSURE 10 AND 25 KBAR IN THE WATER PRESENCE. THE FORSTERITE, DIOPSIDE, CALCITE, TITANOMAGNETITE ARE ESTABLISHED TO BE FORMED AT THE TEMPERATURES BELOW THE MELTING TEMPERATURE, AT 25 KBAR PRESSURE PYROPE RECRYSTALLIZATION IS POSSIBLE. THE COOLING OF KIMBERLITE MELT LEAD TO FORSTERITE AND GLASS FORMATION. BY THE LOCATION OF PYROFILLITE INTO REACTIONAL CAMERA AT THE PRESSURE OF 25 KBAR AND TEMPERATURE ABOVE 800-900DEGREESC ALMOST FULL RECRYSTALLIZATION OF SOURCE MATERIAL INTO GARNET TAKES PLACE, THE GARNET IS CLOSE TO PYROPE IN COMPOSITION.

UNCLASSIFIED

USSR UDC 543.42

LISIYENKO, D. G., MUZGIN, V. N., and ZOLOTAVIN, V. L.

"Spectral Analysis of the Products of Processing Titanium Magnetite Ores by the Aerosol Spark Method"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 15, No 3, Sep 71, pp 388-395

Abstract: The authors describe a method of spectral analysis of finely dispersed powder samples of a concentrate and agglomerate by blasting their water suspensions into a high-volt spark discharge. They found that in the case of determining large concentrations of iron (50-65%) a percision of the analysis that satisfies the technological requirements can be obtained by the use of the method of conventional integral graphs. A graduated graph was constructed at the coordinates $[\Delta S_{Fe-Ca}+0.59\ \Delta S_{Fe-Ti}]$-log C_{Fe}. They indicated theoretically and proved experimentally that the increase of the slope of the graduated graphs is explained by the existence of certain regularities in the modification of the composition of the samples rather than by the developing effect of "third elements." In the case of determining vanadium, calcium, silicon, and titanium the authors suggest using components of the sample as the elements of internal comparison, thus allowing the analytical errors in the uncontrollable variations in degree of dispersion of the samples to be 1/2

USSR

LISIYENKO, D. G., et al., Zhurnal Prikladnoy Spektroskopii, Vol 15, No 3, Sep 71, pp 388-395

substantially decreased. The necessary condition for applicability of the element of comparison with a variable concentration in the samples is the proximity of the concentration sensitivity of its lines to the lines of the elements to be analyzed. They show that this can be done by modifying the capacitance of the discharge circuit of the generator. The optimal analytical conditions are reached when C = 0.005 μfarad. The graduated graphs were constructed at the coordinates ΔS-log $\frac{C_{an}}{C_{av}}$. The mean relative deviations of the results of the spectral analysis from the data of chemical analysis are 0.45% for iron, 2.7% for calcium, 3.5% for silicon, 3.2% for vanadium, and 4.0% for titanium. The article contains 1 illustration, 4 tables, and 7 bibliographic entries.

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1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--PROTECTIVE COATINGS FOR CONCRETE SURFACES -U-

AUTHOR-(05)-ROSHCHUPKIN, V.I., FAYNTSIMER, R.Z., YAKOVLEV, D.A., PINUS, E.R., LISIENKO, S.K.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 260,877

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--06JAN70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PROTECTIVE COATING, CONCRETE, COUMARIN INDENE RESIN, BUTYL RUBBER, FILLER, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1094 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0116560

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AA0116560

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROTECTIVE COATINGS BASED ON ORG. COMPOS. ARE USED SHIEFLY FOR CONCRETE SURFACES. THEY HAVE GOOD PHYSICOMECH. PROPERTIES, DESIRED ROUGHNESS, AND A RAPID RATE OF COATING. THEY CONSISTED OF: COUMARONE-INDENE RESIN 1-50, PETROLATUM 5-30, PARAFFIN 0.5-5, BUTYL RUBBER 0.05-2, FILLER 1.0-30, AND AN ORG. SOLVENT 10-200 PARTS-WT. A MIXT. OF ZR WITH AL POWDER IN A 1:10 WT. RATIO IS USED AS THE FILLER. FACILITY: STATE SCIENTIFIC RESEARCH AND PLANNING INSTITUTE OF PETROLEUM MACHINE CONSTRUCTION. FACILITY: STATE ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF HIGHWAYS.

UNCLASSIFIED

USSR UDC 621.4/.6:533.6

BONDARENKO, V. V., LISIYENKO, V. G., KITAYEV, B. I.

"Investigation of the Ejecting Capacity of an Ejector With a Short Mixing Chamber"

Sb. nauch. tr. Perm. politekhn. in-t (Collection of Scientific Works. Perm' Polytechnical Institute), 1971, No. 91, pp 207-212 (from RZh-Mekhanika, No 6, Jun 72, Abstract No 6B409)

Translation: The results of an experimental study of a low-head gas ejector with a central convergent active flow nozzle and a cylindrical mixing chamber are presented. The low-head air is sucked in from the atmosphere without choking. There is no output diffuser in the ejector so that exhaust into the atmosphere is directly from the mixing chamber. The effect of the length of the mixing chamber and the distance l from the cutoff of the nozzle to the input cross section of the mixing chamber on the ejection coefficient was investigated. It was established that the maximum value of k for small l is achieved for a relative length of the mixing chamber equal to 6 calibers (as referred to the diameter of the mixing chamber). For large l (about 20 calibers), the maximum value of k was achieved for a mixing chamber length of ~4-4.5 calibers. Yu. A. Lashkov.
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USSR UDC: 536.46:533.6

LISIYENKO, V. G., VORONOV, G. V., GUSHCHIN, S. N.

"Characteristics of the Velocity Field of a Gas Jet"

Tr. In-ta metallurgii. Ural'sk. fil. AN SSSR (Works of the Institute of Metallurgy. Ural Affiliate of the Academy of Sciences of the USSR), 1970, vyp. 21, pp 124-130 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4B791)

Translation: A computational analysis is made of the characteristics of the field of velocities in the cross sections of a burning gas jet. The optimum density and relative velocity in the cross sections of the burning jet are calculated on the basis of use of relationships of the theory of a free diffusion turbulent flare and application of conditions of similarity of the fields of dynamic heads in the cross sections of a cold jet and a burning flare, and the change in relative density lengthwise of the flare is determined. It is shown that within the limits of the zone of intense burning of the flare, the field of velocities in the beginning of the zone is more uniform in the flare than in the cold jet. At the end of this zone, the field of velocities becomes less uniform than in the cold jet. Conclusions are drawn on the effect of density on the position of the maximum velocity on the axis. It is shown how the caloricity of the gas affects manifestation of the velocity maximum. Yu. F. Dityakin.

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1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--DESIGN OF MAZUT NOZZLE MIXERS AND GAS MAZUT BURNERS FOR STEELMAKING FURNACES -U-
AUTHOR-(02)-LISIYENKO, V.G., KARPUSHIN, V.K.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(2), 165-9

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--NOZZLE, PETROLEUM RESIDUE, METALLURGIC FURNACE, STEEL MANUFACTURING PROCESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1402 STEP NO--UR/0148/70/013/002/0165/0169

CIRC ACCESSION NO--AT0120195

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0120195

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CALCNS. WERE MADE TO DET. THE EFFECT OF VARIOUS FACTORS (SUCH AS THERMAL AND DYNAMIC DISEQUIL. IN THE NOZZLE MIXER, ENERGY LOSS OF THE GAS STREAM, ETC.) ON THE EXIT CROSS SECTION OF THE TITLE MIXER. CONSIDERABLE SLIPPAGE OCCURS AT THE MIXER EXIT, AND IF THIS IS NOT TAKEN INTO ACCOUNT IN THE CALCNS., THE DIAM. OF THE MIXER EXIT (A) WILL BE MUCH TOO LARGE WHILE THE EXIT SPEEDS OF THE FUEL ATOMIZING MEDIUM MIXT.' (V) WILL BE TOO LOW. AN EQUATION WAS DERIVED WHICH GAVE VALUES OF A AND V CORRESPONDING TO EXPTL. DATA.

FACILITY: URAL. POLITEKH. INST., SVERDLOVSK, USSR.

UNCLASSIFIED

USSR UDC: 621.319.4

LISKER, K. Ye., ALEKSANDROV, L. A.

"On Synthesizing High-Frequency Capacitor Ceramic in Oxygen-Free Gas Atmospheres"

Elektron. tekhnika. Nauch.-tekhn. sb. Radiodetali (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 4(21), pp 27-37 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V323)

Translation: The authors investigate the effect which a reducing gas atmosphere during annealing has on the properties of titanium-containing and titanium-free ceramic. A high-frequency capacitor material based on calcium and barium zirconates annealed in hydrogen is recommended. It is shown that it is possible in principle to use this material in combination with molybdenum electrodes to make monolithic capacitors. Resumé.

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USSR

UDC 621.791.052:620.193:669.295

BLASHCHUK, V. YE., Engineer, GUREVICH, S. M., Doctor of Technical Sciences, SHELENKOV, G. M., Engineer, Electric Welding Institute imeni Ye. O. Paton; TKACHENKO, N. M., Candidate of Technical Sciences, VASILENKO, I. I., Candidate of Technical Sciences, LISKEVICH, I. YU., Engineer, ZAFIYOVSKIY, YU. M., Engineer, ISAYEVA, K. M., Engineer, and MELEKHOV, R. K., Engineer, Physico-mechanical Institute of the Academy of Sciences UkrSSR

"The Tendency of AT3 Titanium Alloy Welded Joints to Mechanical Corrosion Failure"

Moscow, Svarochnoye Proizvodstvo, No 1(471), Jan 74, pp 39-40

Abstract: A study was made of the tendency of AT3 titanium alloy and its welded joints to breakdown at increased temperature and pressure in a 0.6% solution of H_2SO_4, as applicable to the working conditions of hydrolytic apparatus. Specimens of AT3 alloy were cut from 24-mm-thick hot-rolled sheet. The failure of welded joints took place at stresses exceeding the yield limit of the alloy. The conditional limits of the corrosion-fatigue strength in axial load with symmetric tension and compression of AT3 alloy and its manually welded joints are close. Automatically welded joints show, in comparison with AT3 alloy,

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USSR

BLASHCHUK, V. YE., et al., Svarochnoye Proizvodstvo, No 1(471), Jan 74, pp 39-40

some decrease in strength at stresses exceeding the conditional limit of corrosion-fatigue strength. The AT3 alloy and its welded joints show practically the same durability at cyclic torsion. AT3 alloy is recommended for the production of welded experimental hydrolytic apparatus. Four figures, one table, eight bibliographic references.

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USSR UDC 539.43

TKACHENKO, N. N., LISKEVICH, L. YU., TEREKH, O. I. and SVISTUN, R. P., Institute of Physics and Mechanics, Academy of Sciences Ukrainian SSR

"Corrosion-Fatigue Strength of Welded Joints From St.3 Steel Under Elastic-Plastic Torsion in Nitrate and Alkali Solutions"

Kiev, Fiziko-khimicheskaya mekhanika materialov, Vol 8, No 1, 1972, pp 37-40

Abstract: This study concerns the service life of welded joints from St.3 steel under elastic-plastic torsion in nitrate and alkali solutions at boiling temperatures (57% $Ca(NO_3)_2$ + 6% NH_4NO_3 + 37% H_2O, boil. p. = 114°C; 40% NaOH + 60% H_2O, boil. p. = 112°C). The cyclic strength tests of both single-piece and welded specimens were conducted at atmospheric pressures at 2 cycles per minute. Metallographic studies of the specimens indicate that the cyclic strength is reduced to a greater extent by the active corrosive medium than by the presence of welding, specifically at low strain levels. The softening effect of the medium is more pronounced in testing welded specimens. It is also shown that alkaline solutions are more aggressive, in this respect, than nitrate solutions. (1 illustration, 14 bibliographic references.

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USSR UDC 615.281:547.734

VAKHREYEVA, K. I., LIPKIN, A. Ye., RYSKINA, T. B., and SKACHKOVA, N. I., Kuybyshev Polytechnical Institute imeni V.V. Kuybyshev

"Synthesis of Azomethine Bases of the 2,2'-Bithiophene Series with Potential Biological Activity. Communication II."

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 3, 1973, pp 24-28

Abstract: Azomethine bases with nitro groups in the bithiophene portion of the molecule were synthesized to study the effects of the nitro groups on the antimicrobial activity of the more complex 2,2'-bithiophene derivatives. Nitration of 5-formyl-2,2'-bithiophene with cupric nitrate in acetic anhydride resulted in the formation of a mixture of 5-formyl-5'-nitro- and 5-formyl-3'-nitro-2,2'-bithiophene diacetates, hydrolysis of which gave 5-formyl-5'-nitro-2,2'-bithiophene (I) and 5-formyl-3'-nitro-2,2'-bithiophene (II). Reaction of I and II with aromatic amines, aminophenols, and aromatic acids resulted in the formation of azomethine bases, the structures of which were confirmed by chemical analyses and IR spectra. The most potent antibacterial activity was exhibited by the 3-carboxyphenyl (3'-NO_2) derivative which, at a concentration of 250 μg/ml of solid medium was bacteriocidal for pathogenic pneumococci and straphylococci, and at a concentration of 400 μg/ml was bactericidal for Shigella sonnei and Sh. flexneri.

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USSR UDC: 517.948:518

LISKOVETS, O. A.

"Solution for An Incorrect Second-Order Differential Problem"

Minsk, Izvestiya Akademii Nauk Belorussian SSR--Seriya Fiziko-matematicheskikh Nauk, No 4, 1972, pp 20-24

Abstract: This paper considers the Cauchy problem in Hilbert space for the following second-order differential equation with self-conjugate positive operator:

$$\frac{d^2u}{dt^2} = A^2u, \quad 0 \leqslant t \leqslant T,$$

$$u(0) = u_0; \; u'(0) = 0.$$

This problem is analogous to the Cauchy problem for the Laplace equation. The author also establishes the correctness class for it and proposes a difference method for its solution, after which he indicates the method of its regularization. He is a member of the Institute of Mathematics, Belorussian Academy of Sciences.
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Extraction and Refining

USSR UDC 669.295.3.82

MEYERSON, G. A., LISKOVICH, V. A., and BOYKO, A. I., Moscow, Zaporozh'ye

"Investigation of the Hydrometallurgical Reprocessing of Wastes of Titanium Alloys"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 73, pp 44-49

Abstract: With reference to previous investigations on hydrogenation of titanium materials (Rubtsov, A. N., et al., "Naukova Dumka", 1971; Olesov, Yu. G., et al., "Tsvetnyye Metally", 1967, No 2), results of further studies on the reprocessing of off-grade wastes of titanium alloys by the hydrogenation-hydrometallurgy method are discussed. Effects of technological factors on the degree of recovery of Al, V, and Mo in the leaching process of hydrogenation of binary, ternary, and industrial VT6 and VT8 titanium alloys are investigated. Favorable effects of prehydrogenation and of leaching the wastes of VT6 alloy on the indices of subsequent electrolytic refining are ascertained. Five tables, ten bibliographic references.

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USSR

EISENSTADT, V. S., LISKOVETS, V. A., FEINBERG, V. Z. (Mathematics Institute, Belorussian Academy of Sciences)

"Solution of the Problem of Optimal Distribution of Memory Between Working Area of Subroutines"

Minsk, Vestsi Akademii Navuk BSSR, Seryya Fizika-Matehmatychnykh Navuk, No 6, 1970, pp 12-26

Abstract: Let S_1, S_2, ..., S_n be the set of subroutines (procedures) of a program S; and r_i, the volume of the working area of S_i. One subroutine during the course of its operation can be changed to (initiate) another subroutine. In that case their working areas cannot overlap. The authors study the problem of distributing the memory between working areas of subroutines S_1, S_2, ..., S_n in such a way as to minimize the total number of storage locations occupied by them.

The program S is given by an oriented graph G for the initiation of subroutines, to the vertices of which are assigned the weights r_1, r_2, ..., r_n. The sum of the weights for the various vertices is called the "weight of the oriented chain

USSR

EISENSTADT, V. S., et al, Vestsi Akademii Navuk BSSR, Seryya Fizika-Matematychnykh Navuk, No 6, 1970, pp 19-26

of G." It is shown that the necessary minimum number of working locations of the program S is equal to the weight of the maximum chain of the graph G. An efficient algorithm for the optimal distribution of memory is derived.

The suggested algorithm can be used for minimal coloring of the vertices of a transitive graph.

There are five bibliographic references.

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USSR

UDC: 669.295.48.053.4

LISKOVICH, V. A., MEYERSON, G. A., BOYKO, A. I., KANYUK, A. I.

"Processing of Untreated Titanium Alloy Wastes by the Hydrogenation-Hydrometallurgy Method"

Moscow, Tsvetnyye Metally, No 7, Jul 73, pp 38-41.

Abstract: The expediency and economic effectiveness of the use of combined modes of leaching of the products of hydrogenation of untreated titanium alloy wastes with solutions of nitric acid and caustic alkali for extraction of aluminum, vanadium and molybdenum into solution before final electric refining are demonstrated. The alloying elements were extracted from the hydrogenation products by leaching in a heated ball mill. The combination of the grinding action of the balls with the chemical action of the reagents intensifies the process. The optimal extraction conditions were found to be: mill rotation rate 80% of critical, liguid:solid ratio 20:1, ball load 30% of mill volume. The total economic effect of the recovery process is 546 rubles per ton of powder, or 331 rubles per ton of titanium waste.

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USSR UDC 669.295.48

SMIRNOV, Yu. R., LISKOVICH, V. A., KHAVSKIY, N. N., MEYERSON, G. A., BOYKO, A. I.

"Some Results of Investigation of Application of Ultrasound in Hydrometallurgical Processing of Titanium Alloy Wastes"

Primeneniye Ul'trazvuka v metallurg. Protsessakh [Use of Ultrasound in Metallurgical Processes -- Collection of Works], Moscow, 1972, pp 98-102, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G267 by the authors)

Translation: Results are presented from studies of combined reagent modes of leaching of trinary Ti-Al-V alloy hydride with the application of US oscillations. The duration of the process and temperature decrease in comparison with leaching in an ordinary tank. However, the ultrasound causes undesirable overfine breakdown of some portion of the solid phase, hindering further treatment of the suspensions. 3 Figures; 2 Tables; 4 Biblio. Refs.

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USSR UDC 669.295.002.68

RUBTSOV, A. N., OLESOV, Yu. G., CHERKASHIN, V. I., ANTONOVA, M. M., and LISKOVICH, V. A.

"New Methods of Reprocessing Titanium Material Wastes"

Moscow, Tsvetnyye Metally, No 5, May 70, pp 60-62

Abstract: Two new laboratory methods of reprocessing wastes from titanium production are described and evaluated. The first method involves electrolytic refining of dehydrated titanium alloys, and the second, hydrometallurgical separation of hydrated components of titanium alloys. Titanium alloy powders of a given chemical composition were produced by hydrogenation. The expediency of producing hard refractory compounds (carbides, nitrides, borides, etc.) from titanium and its alloys wastes is stressed. The new methods are undergoing further testing.

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USSR

BOYKO, A. I., and LISKOVICH, V. A.

"Determining Oxygen Content in Titanium Hydride"

Moscow, Zavodskaya Laboratoriya, Vol 36, No 11, 1970, pp 1327-1329

Abstract: The results are presented of an investigation of the oxygen content in titanium hydride by the vacuum-melting method. Samples with a known oxygen content were analyzed in order to determine the behavior of the oxygen dissolved in titanium under conditions ensuring the evacuation of hydrogen from titanium hydride. The vacuum-melting method was used at 900°C. It was established that no interaction takes place with dissolved oxygen at 900°C and at a 2.10^{-4} mm Hg residual pressure. The experimental setup is shown schematically, and the preparation of samples and the testing procedure are described. The oxygen content in the samples was determined by the formula $C=Vx\Delta Px0.026/(273+t^{o})$, where C is the oxygen content in wt%, V is the gas volumeter volume in l/2

USSR

BOYKO, A. I., and LISKOVICH, V. A., Zavodskaya Laboratoriya, Vol 36, No 11, 1970, pp 1327-1329

milliliters Δ P is the CO_2 pressure in mm Hg; and 0.026 is a coefficient. The mean square analysis error is 0.008-0.01% at an oxygen content $<$ 0.1% and 0.001-0.045% at a 0.1-0.5% oxygen content. Titanium-hydride samples with an oxygen content of 0.067-0.05% and higher were analyzed by this method.

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USSR UDC: 621.311.21.004(282.251.2)

BOCHKIN, A. E., LISKUN, E. E., EPIFANOV, A. P., KOKOT, D. M., STARSHINOV, S. N., Engineers

"On Condition of Krasnoyarskaya GES Dam during First Years of Operation"

Moscow, GidrotekhnicheskoyeStroitel'stvo, No. 4, April, 1971, pp 12-19

Abstract: The subject dam is 124 meters high. It has a triangular cross-section. The upstream face is vertical. It rests on granite rock.

Measures were taken to prevent crack formation by controlling the temperature regime. 1,289 cracks were detected on the piers during the period from 1961 to 1968, which is one-third the number of cracks on Bratskaya GES.

Joints between blocks were periodically inspected ultrasonically for three years after being cemented. Most of them showed increased strength, 20% indicated a slight opening of the joint near the edge.

USSR

BOCHKIN, A.E., et al, Gidrotekhnicheskoye Stroitel'stvo, No 4, April 1971, pp 12-19

The filling of the reservoir started in 1967 and was completed in 1969. Temperature of water at various depths was monitored.

Seeping of water was observed because it is an indication of tension stresses on the upstream face. The seeping decreased from 1967 to 1969.

Vertical and horizontal displacements of various points of the dam were determined optically. Measurements indicated the settling of the foundation on the upstream face of the dam, probably due to the weight of water. Horizontal displacements reached 15 mm.

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USSR

UDC: 693.54:621.311.21(282.251.2)

DOLGININ, YE. A., Chief Engineer of Krasnoyarsk Hydroelectric Power Plant Construction Project, and LISKUN, YE. YE., Chief Technologist

"Concrete Work Involved in the Construction of the Krasnoyarsk Hydroelectric Power Plant"

Moscow, Gidrotekhnicheskoye Stroitel'stvo, No 9, Sep 72, pp. 19-23

Abstract: The concrete dam of the Krasnoyarsk hydroelectric power plant has a maximum height of 124 m, is 1100 m in length and is located in a relatively narrow, rocky canyon of the Yenisey River. Construction of the dam and power plant building required 5.5 million cubic meters of concrete. The dam and power plant were constructed in an area with severe climatic conditions, with temperature fluctuations from -54 to +37°C. This article describes the type and manufacture of cement used, pouring and reinforcing techniques, crack-prevention measures, labor and cost investment. The scaffoldless method developed and successfully used on this project improved the economy and quality of the work. Crack prevention measures (provision of medium-temperature cement from a single supplier, cooling of the concrete mixture at the concrete plants, 3-stage system of cooling of poured concrete using river water, etc.) were quite successful. A high-productivity continuous concrete production plant was used in combination with a smaller, batch-processing plant. The method was quite successful.

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USSR

UDC 621.396.662

TARAN, V. A., LISNENKO, YU. P., GUKASOV, V. G.

"Device for Automatic Tuning of Standardized Modules of Radiotechnical Devices with Respect to Frequency Characteristic"

Metody razrab. radioelektron. apparatury. Materialy Seminara. Sb. 2 (Methods of Development of Radio Electronic Equipment. Materials of the Seminar. Collection 2), Moscow, 1970, pp 43-51 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D28)

Translation: It is noted that the accuracy of automatic tuning can be increased by using the minimum mean square error of the frequency characteristic throughout the entire continuous channel range as the tuning criterion. A schematic which realizes this principle is presented. This schematic belongs to the class of extremal automatic control systems. The bibliography has five entries.

1/1

AA0043511

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

233128 CONTROL OF MULTIPHASE ELECTRIC ARC FURNACES is carried out more accurately by displacing the furnaces electrodes in accordance with co-operation of an improved control system. The block indicating phase assymetry comprises transformers whose primary windings are connected to phase voltages and the secondary windings are connected in series and to the autotransformer. There are also two-phase asynchronous motors which in conjunction with a hydraulic drive control the movement of the electrodes. On to one winding of the motors there is applied the autotransformer voltage and on to the second one linear voltage.

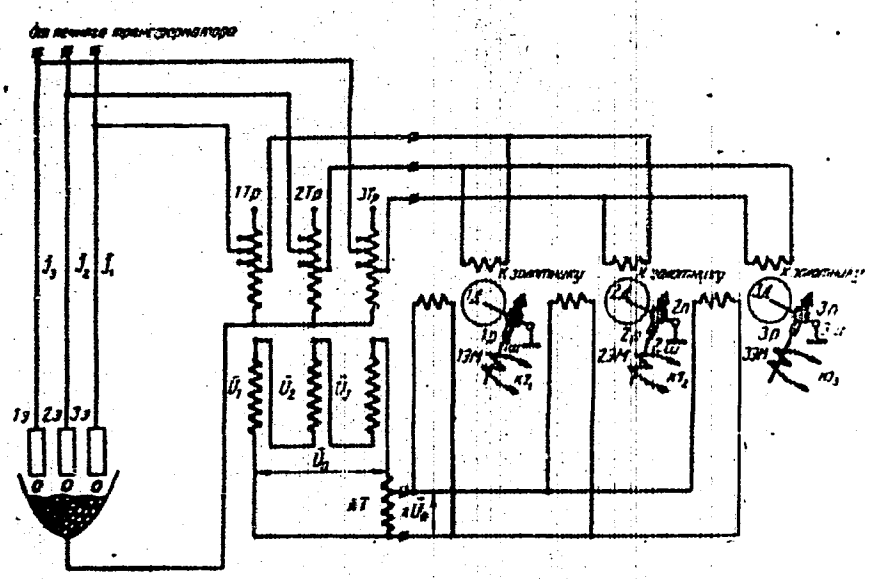
19.7.63 as 848286/24-7. R.M.LISNYANSKII (4.6.69)
Bul 2/18.12.68. Class 21h. Int.Cl. H 05b.

1/2

4

19761912

AA0043511



2/2

19761913

AAC043508 Lisochkin, G.F

UR 0482 1-71

Soviet Inventions Illustrated, Section I Chemical, Derwent,

226155 STEREO-REGULAR POLYMERS are prepared by the polymerisation of di-olefins using a bi-functional polymeric radical catalyst having organo-metalgroups at both ends, the metal combinations being gp. I and II, or I and III, or II, or III. The previous method utilised as catalyst transition metals and alkyls and alkyl-halides of aluminium which were very unstable in the atmosphere. In an example, 370 ml hexane, 95 ml iso-prene, 0.75 g complex bi-functional organo-metal $(NaAlR_2)_2(C_4H_8)_2$, and 0.6 ml $TiCl_4$ are polymerised for 38 hrs. in an autoclave at 20°C. The polymer is precipitated with ethanol to give 67% yield (mol. wt 320,000) of which 90% is cis-1,4-polymer. 2.11.64. as 927914/23-5, PETROV, G. N. et al. S.V. Lebedev Synthetic Rubber Res. Inst. (22.8.69) Bul. 28/5.9.68. Class 39c, Int. Cl. C 08d.

19761906

AA0043508

Petrov, G. N.; Lisochkin, G. F.; Shmagin, V. P.; Shibanova, O. M.

Vsesoyuznyy Nauchno-Issledovatelskiy, Institut Sinteticheskogo Kauchuka imeni Akad. S. V. Lebedeva.

2/2

19761907

Steels

USSR

UDC 669.15'[illegible]

LISOGOR, A. I., BOGACHEVA, N. A., and GAVRILOVA, Z. P., Institute of [illegible] and Inorganic Chemistry, Kiev, Academy of Sciences Ukrainian SSR

"Investigation of the Corrosion Properties of Stainless Steels Modified [illegible] Cerium and Zirconium"

Kiev, Ukrainskiy Khimicheskiy Zhurnal, Vol 36, No 8, Aug 70, pp [illegible]

Abstract: A potentiodynamic method was used to study the effect which modification of stainless steels by zirconium and cerium has on their corrosion properties in solutions of hydrochloric and nitric acid, and in nitric acid with hydrofluoric acid added at room temperature and higher. The different effects of the modifiers were determined as a function of the type of stainless steel and the nature of the aggressive medium. In hydrochloric acid, there is a slight positive effect on the corrosion resistance of [illegible] and [illegible] steels obtained by adding cerium while the addition of zirconium has a slight beneficial effect on the corrosion resistance of [illegible] steel. In nitric acid and in a mixture of nitric and hydrofluoric acids, modification reduces the stability of the passive state in all grades of stainless steel studied.

1/1

UDC: 621.396.96

USSR

LISOGOR, A. N., Moscow Technological Aviation Institute

"On a Criterion for Automatic Locking-on of the Trajectories of Objects in Digital Processing of Radar Data"

Leningrad, Izvestiya VUZov, Priborostroyeniye, Vol 15, No 6, 1970, pp 5-10

Abstract: The author describes a test for automatic locking-on of target trajectories which can be readjusted when there is a change in interference density. The criterion can be used for effective detection of target trajectories with locking-on probability of 0.98 or higher when the density of interference distribution in space varies from 0.8 to 5 inclusive. At the same time, the probability of automatic tracking of undetected false signals is kept at 0.04 or less. A method is also described for determining the necessary volume of the strobe for errors in coordinate extrapolation, the number of samplings, and the number of repeated lock-ons.

1/1

AA0044250 L Lisovenko, A.T.
UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

243902 HEAT FLOW RECORDER in particular for bread baking ovens can measure directly the heat flow during the baking process. The heating surface is covered by a substance, the heat absorption of which is equal to the mean average of absorbing capacity of the material being baked while draining channels (4) are provided in the body of the plate 1. Thermo-electrodes are placed inside the plate. The heat absorbing surface is covered with a layer of a mass 2 with an absorption equal to that of the baked material 3. The coating consists of a mixture of amorphous carbon, pumice and liquid glass. The body of the plate is made of a material with a heat absorption capacity equal to that of the crust of the baked bread.

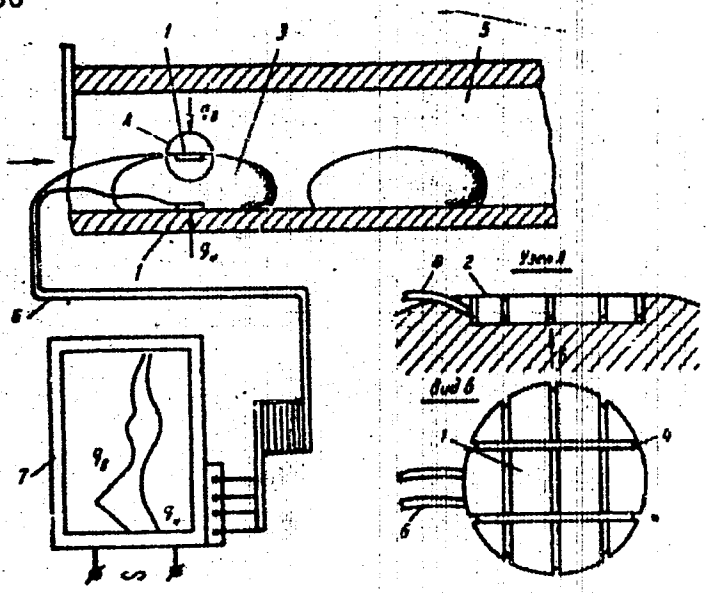
27.11.67 as 1199288/28-13. A.T.LISOVENKO et al. KIYEV INST. OF FOOD IND.(26.9.69) Bul 17/14.5.69. Class 42i, 2a. Int.Cl.G 01k.A21b.

21

1/3

19770760

AA0044250



2/3

19770761

AA0044250

AUTHORS: Lisovenko, A. T., Gerashchenko, O. A., Karpenko, V. G.

Kiyevskiy Tekhnologicheskiy Institut Pishchevoy Promyshlennosti

3/3

19770762

USSR UDC 681.3.06:51

ITENBERG, I. I., KOSTELYANSKIY, V. M., LISOVENKO, N. N.

"Method of Compressed Placement of Tables of Values of Functions in Computer Memory"

Tr. NII Upravl. Vychisl. Mashin [Works of Scientific Research Institute for Control and Computing Machines], No 1, 1970, pp 91-95, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V776).

NO ABSTRACT.

1/1

USSR

UDC: 8.74

LISOVENKO, N. N.

"Concerning a Method of Formal Deparallelization of Algorithms"

Tr. Mosk. energ. in-ta (Works of Moscow Power Engineering Institute), 1972, vyp. 96, pp 76-78 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V610)

Translation: A method is described for formal deparallelization of algorithms by cycles. The procedure is based on direct analysis of a recording of the algorithm (e. g. in ALGOL). The analysis of the algorithm is done separately for each cycle beginning with the most inner cycles, and has the purpose of determining for each operation all values of the parameters of the cycle where these operations are executed in parallel. V. D'yachenko.

1/1

USSR

UDC 535.370 : 548.0

LISOVENKO, V. A., and SHPAK, M. T.

"Fluorescence of Anthracene Single Crystals Whose Surface is Disturbed by an Impurity"

Leningrad, Optika i Spektroskopiya, Vol 32, No 4, Apr 72, pp 735-739

Abstract: The article describes results of a study of the fluorescence and absorption spectra of anthracene single crystals on whose surface impurities (particularly carbazole) are sputtered. When carbazole is applied to the surface of an anthracene single crystal, there is a significant change in the fluorescence spectrum of the anthracene crystal; along with exciton fluorescence of crystalline anthracene, a new broad-band spectrum appears, shifted to the long-wave region from the start of the exciton fluorescence. The more carbazole sputtered on the anthracene, the greater the intensity of the new luminescence. The intensity of the exciton fluorescence diminishes. A saturation effect is observed. Additional structureless absorption is observed from the long-wave side in the absorption spectrum of the anthracene crystals

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USSR

LISOVENKO, V. A., and SHPAK, M. T., Optika i Spektroskopiya, Vol 32, No 4, Apr 72, pp 735-739

with sputtered carbazole as compared to the absorption spectrum of unsputtered crystals. The bands of the new luminescence are almost completely depolarized. The pure electronic band of exciton fluorescence of the anthracene crystal is also depolarized in this case. Similar results were obtained by applying naphthalene and diphenylene oxide to the surface of anthracene crystals.

A comparison of theoretical predictions and the above experimental results indicates that the long-wave luminescence is the result of the split-off of local levels from the exciton band. Experiments show that the implantation of carbazole molecules in the anthracene lattice does not lead to the formation of local states below the exciton band. During solidification of the anthracene-carbazole mixture, part of the carbazole forms a solid solution with the anthracene, while the rest is eliminated on the surface of the

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USSR

LISOVENKO, V. A., and SHPAK, M. T., Optika i Spektroskopiya, Vol 32, No 4, Apr 72, pp 735-739

microblocks, microcrystals of anthracene. The latter portion of the carbazole is responsible for the broad-band spectrum.

The authors thank N. I. OSTAPENKO for useful discussion of the results.

3/3

UNCLASSIFIED PROCESSING DATE--17JUL70

TITLE--LUMINESCENCE OF PHENANTHRENE WITH AN ANTHRACENE IMPURITY ADSORBED ON NAY ZEOLITE -U-

AUTHOR--DENISENKO, G.I., LISOVENKO, V.A., SHPAK, M.T.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(1), 108-12

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--LUMINESCENCE, ANTHRACENE, ZEOLITE, ADSORPTION, HEPTANE, CHEMICAL SEPARATION, PHENANTHRENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1323 STEP NO--UR/0368/70/012/001/0108/0112

CIRC ACCESSION NO--APOO55994

UNCLASSIFIED

Acc. Nr: AP0055994

Abstracting Service: CHEMICAL ABST. 6-70

Ref. Code: UR 0368

116417g Luminescence of phenanthrene with an anthracene impurity adsorbed on NaY zeolite. Denisenko, G. I.; Lisovenko, V. A.; Shpak, M. T. (USSR). *Zh. Prikl. Spektrosk.* 1970, 12(1), 108–12 (Russ). Fluorescence and phosphorescence spectra were recorded at 77°K. The samples were prepd. as described (G. I. Denisenko, 1968). The initial concn. of phenanthroline, contg. traces of anthracene in heptane and in zeolite was 10^{-3} and 10^{-1}–10^{-3} g/cm³. Changes of the spectra on evacuation, exposure to air, and washing with heptane indicate that on exposure to air, the hydrocarbons are forced on the zeolite surface where they form aggregates similar to mixed crystals. This phenomenon can be used to remove traces of anthracene from phenanthrene. V. Zitko

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REEL/FRAME
19841323

USSR

UDC 535.345.1

LISOVETS, YU. P., POLUEKTOV, I. A., POPOV, YU. M., ROYTENBG, V. S.

"Passage of a Coherent Ultrashort Light Pulse Through a Semiconductor"

Moscow, Kvantovaya Elektronika, No 5, 1971, pp 28-36

Abstract: Resonance interaction of an ultrashort coherent light pulse with a semiconductor, when the pulse duration is less than the polarization relaxation time or the "phase memory" of the medium, is discussed. The possibility of the existence of the effect of self-transparency under interzone transitions in semiconductors is first considered. This effect means that under certain conditions powerful ultrashort light pulses propagate practically without energy dissipation through an absorbing medium which becomes transparent for them. The medium then consists of a set of "two-level" atoms or molecules which have an allowed dipole transition in resonance with the carrier frequency of the pulse and which interact with one another only through the radiation field. The problem of the interaction of a coherent light pulse with a semiconductor is analyzed in detail, and conditions ensuring the passage of a pulse without energy losses i.e., self-transparency are determined. It is shown that under certain conditions the formation of a steady-state 2π-pulse is possible.

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USSR

LISOVETS, YU. P., et al., Kvantovaya Elektronika, No 5, 1971, pp 28-36

Numerical values of the rate of propagation of a stable pulse are obtained for characteristic values of semiconductor parameters. It is observed that under conditions characteristic of many semiconductors the self-transparency effect is possible in principle, and the stationary pulse that arises can move at a speed that is an order of magnitude less than the ordinary speed of light in the given material.

2/2

1/2 017 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--THE EFFECT OF GRINDING CONDITIONS UPON THE TEMPERATURE IN THE CUTTING ZONE -U-

AUTHOR-(03)-FILOMENKO, S.N., ANELCHIK, D.YE., LISOVOY, G.Z.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, STANKI I INSTRUMENT, NO 3, 1970, PP 39-40

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--GRINDING MACHINE, METAL CUTTING, TEMPERATURE MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0887 STEP NO--UR/0121/70/000/003/0039/0040

CIRC ACCESSION NO--AP0113731

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0113731

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TEMPERATURE ORIGINATING IN THE CUTTING ZONE IS A MOST IMPORTANT PARAMETER IN GRINDING, BUT ITS DIRECT DETERMINATION BY A THERMAL TRANSDUCER IS DIFFICULT DUE TO THE FACT THAT ITS TIME CONSTANT CONSIDERABLY EXCEEDS THE CONTACT TIME. THEREFORE THE INSTANTANEOUS CONTACT TEMPERATURE HAS BEEN CALCULATED BY MEANS OF A DYNAMIC METHOD, BASED UPON THE FACT THAT WITH UNKNOWN CONSTANT CONDITIONS OF HEAT EXCHANGE, THE TEMPERATURE OF A MEDIUM MAY BE DETERMINED ON THE BASIS OF THE READINGS OF A THERMOCOUPLE. A FORMULA HAS BEEN DEVELOPED WHEREBY IT IS POSSIBLE TO DETERMINE THE TRUE CONTACT TEMPERATURE ON THE BASIS OF THE VALUE OF THE RECORDED INCREMENT OF THERMOELECTROMOTIVE FORCE CORRESPONDING TO THE TIME OF CONTACT OF THE GRINDING DISK WITH THE PART. THE INSTANTANEOUS CONTACT TEMPERATURE DURING EXTERNAL CIRCULAR GRINDING WAS OBTAINED BY MEANS OF AN ATTACHEMENT MOUNTED ON THE GRINDING MACHINE. THE ERROR OF COMPUTING THE INSTANTANEOUS CONTACT TEMPERATURE ON THE BASIS OF THE ABOVE MENTIONED FORMULA DOES NOT EXCEED 8PERCENT.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--FUNCTIONAL CHANGES OF NONHEME IRON COMPLEXES IN YEAST CELLS -U-

AUTHOR-(03)-LISOVSKAYA, I.L., VANIN, A.F., BLYUMENFELD, L.A.

COUNTRY OF INFO--USSR

SOURCE--BIOFIZIKA 1970, 15(2), 308-11

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--YEAST, IRON, MITOCHONDRION, PHOSPHORYLATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0270 STEP NO--UR/0217/70/015/002/0308/0311

CIRC ACCESSION NO--AP0135766
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--20NOV70

2/2 011

CIRC ACCESSION NO--AP0135766

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESPIRATORY CONTROL VALUE OF SACCHAROMYCES CEREVISIAE WAS CORRELATED WITH CHANGES IN THE ESR SIGNAL WHILE TREATING THE CELLS WITH NO. SINCE NITROSYL COMPLEXES OF NONHEME FE ARE RESPONSIBLE FOR THE SIGNAL, IT IS SUGGESTED THAT NONHEME FE IS PRESENT IN DIFFERENT STATES IN YEAST MITOCHONDRIA CAPABLE AND INCAPABLE OF OXIDATIVE PHOSPHORYLATION. FACILITY: INST. CHEM. PHYS., MOSCOW, USSR.

UNCLASSIFIED

Welding UDC 669.018.25

USSR

BONDARENKO, B. P., and LISOVSKIY, A. F., Institute of Ultrahard Materials

"Capillary Welding of Sintered Hard Alloys"

Kiev, Poroshkovaya Metallurgiya, No 8, Aug 73, pp 28-33

Abstract: An attempt was made to analyze the process of filling a capillary, formed by the parts being welded, with molten cobalt. The processes occurring in the welding of hard alloys were studied on samples measuring 5x8x35 mm from alloys VK2, VK6M, VK6, VK6V, VK8, VK15, and VK20. Metallographic analysis revealed an absence of eta$_1$-phase traces as well as graphite. It was established that for the investigated alloy grades there exists a critical value of thickness of the capillary that can be filled with molten cobalt. These capillary thicknesses ranged from 2.0 microns for VK2 up to 18.0 microns for VK20. Under the action of capillary forces the volumes of the alloy lying close to the joint are in a compressive state which enhances the increase of contact area between the carbide particles and a decrease in the thickness of the individual sublayers of cobalt between them and, in turn, makes it possible to determine the amount of liquid entering into the capillary. The experiments showed that at 1390°C and a

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USSR

BONDARENKO, B. P. et al., Poroshkovaya Metallurgiya, No 8, Aug 73, pp 28-33

pressure of 0.9 kg/cm^2, plastic flow of hard alloy VK6 occurs which indicates a regrouping of tungsten carbide particles. The mathematics of determining the critical capillary thickness are presented. Three figures, one table, nine bibliographic references.

2/2

UDC 669. 018.25

USSR

LISOVSKIY, A. F. and LIHENKO, Yu. P., Institute of Superhard Materials, Kiev

"Cermet Hard Alloys With Variable Cobalt Contents"

Kiev, Poroshkovaya metallurgiya, No 3, 1972, pp 38-41

Abstract: The objective of the study was to develop a new method of producing hard-alloy products with variable Co contents over the cross section as well as to determine the physicomechanical and service properties of such materials. The study involved 5 x 8 x 35-mm specimens sintered from VK2, VK6B, and VK15 powder mixtures. Experiments on contacting the sintered nonporous VK-2 alloy specimens with a cobalt melt (63 wt% Co and 37% WC) at pressures of 10^{-2} mm Hg at 1350°C show a cobalt penetration into the specimen to a depth of about 5 mm. In specimens prepared for variable Co contents, the latter varied from 2 to 18-20 wt% over the cross section. The variable Co content causes appropriate changes in physical and mechanical properties and wear resistance. The new method makes it possible to produce hard-alloy products with greater strength in areas exposed to tensile stresses and higher wear resistance in sections that are subject to intensive wear. (3 illustrations, 1 table, 5 bibliographic references)

1/1

UDC 669.018.25

USSR

LISOVSKIY, A. F. and BABICH, M. M. (Deceased), Institute of Superhard Materials, Kiev

"Study of Cobalt Melt Redistribution in Cermet WC-Co Hard Alloys"

Kiev, Poroshkovaya metallurgiya, No 2, Feb 72, pp 53-58

Abstract: Welding or sintering superhard alloys in the presence of the liquid phase causes redistribution of cobalt over various sections of the article resulting in a variation of contents and particle sizes of tungsten carbide which, in turn affects the physical, mechanical, and service properties of the article. The characteristics of specimens of VK15-VK6, VK15-VK11B, VK15-VK2, VK10M-VK6, VK10M-VK8, VK10M-VK8B, and VK6B-VK6M superhard alloys before and after heat treating are shown in a table. The liquid phase content was determined at 1390°C. Derived were relationships for the liquid phase equilibrium enabling determination of the direction of liquid phase migration in the alloys, evaluation of Co contents following redistribution, as well as appropriate selection of alloys to satisfy the equation for the mechanical equilibrium of the liquid phase and preclude Co redistribution. (1 illustration, 1 table, 9 bibliographic references).

1/1

UNCLASSIFIED PROCESSING DATE--11SEP70

1/2 028

TITLE--OXIDATION OF AMMONIA ON A BISMUTH MOLYBDENUM CATALYST -U-

AUTHOR--ALKHAZOV, T.G., ADZHAMOV, K.YU., LISOVSKIY, A.YE., BELENKIY, M.S., PORTYANKSIY, A.YE.

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(1) 123-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYTIC OXIDATION, AMMONIA, NITROGEN, ACTIVATION ENERGY, BISMUTH, MOLYBDENUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0195/70/011/001/0123/0129

PROXY REEL/FRAME--1989/0195

CIRC ACCESSION NO--AP0106851

UNCLASSIFIED

UNCLASSIFIED

2/2 028 PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106851

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IR SPECTRA SHOW THAT N SUB2 O, NO, N SUB2, AND H SUB2 O ARE THE MAIN PRODUCTS OF THE CATALYTIC OXIDN. OF NH SUB3 ON A 1:2 BI,MO CATALYST. 70PERCENT OF THE NH SUB3 IS CONVERTED TO N AND THE REMAINING PART IS OXIDIZED TO THE MENTIONED PRODUCTS. THE ACTIVATION ENERGY OF NH SUB3 OXIDN. IS 11 KCAL-MOLE AND THE OXIDN. IS A 1.5 ORDER REACTION WITH RESPECT TO NH SUB3 CONCN.

UNCLASSIFIED

LISOVSKIY, D. I.

UDC 62-501.21

OPTIMIZATION OF THE PROCESS OF TUNGSTEN TRIOXIDE REDUCTION

[Article by D. I. Lisovskiy, V. A. Ivanov, Ye. I. Gutov, Moscow Institute of Steel and Alloys, Department of Control and Automation of Nonferrous and Rare Metal Production; Tsvetnyye Metally, Russian, No 6, 1971, signed to press 25 May 1971, pp 150-152]

The reduction of tungsten trioxide (WO_3) with hydrogen in furnaces with a rotating tube is a complex multifactor process that is virtually not amenable to deterministic description. To construct a statistical model for it, it is necessary to solve the question of how many and what kind of factors should be taken into consideration. An informal (intuitive) choice may lead to an increase in the number of tests in investigating the surface of response. Ineffective results in investigating the surface of response.

We used a statistical method of formalization of a priori information, which permits evaluating the comparative influence of the individual independent variables (factors) on the process of reduction [1].

A group of seven specialists has suggested ranking the X_i ($i = 1, 2, \ldots, 17$) variables: X_1 is the amount of hydrogen fed immersed into the furnace, X_2 is the temperature of the third zone, into the furnace, X_3 is the temperature of the second zone, X_5 is the temperature, X_4 is the temperature of the first zone, X_6 is the angle of slope of the furnace tube, X_7 is the rate of rotation of the furnace tube, X_8 is the humidity of the hydrogen supplied, X_9 is the temperature of heating the hydrogen, X_{10} is the temperature of the shaking mechanism, X_{11} is the number of impacts of the shaking mechanism, X_{12} is the grain size of the immersed WO_3, X_{13} is the bulk density of the WO_3, X_{14} is the amount of molybdenum in the WO_3, X_{15} is the amount of oxygen in the WO_3, X_{16} is the length of the furnace condenser, X_{17} is the number of furnace temperature zones in accordance with the degree of

JPRS 55880
H May 72

LISOVSKIY, D. I.

OPTIMIZATION OF THE PROCESS OF TUNGSTEN TRIOXIDE REDUCTION

[Article by D. I. Lisovskiy, V. I. Tret'yakov, V. A. Ivanov, Ye. I. Gusev, Moscow Institute of Steel and Alloys, Department of Control and Automation of Nonferrous and Rare Metal Production; Ordzhonikidze, Izvestiya Vuzov, Tsvetnaya Metallurgiya, Russian, No 6, 1971, signed to press 20 May 1971, pp 150-152]

The reduction of tungsten trioxide (WO_3) with hydrogen in furnaces with a rotating tube is a complex multifactor process that is virtually not amenable to deterministic description. To construct a statistical model for it, it is necessary to solve the question of how many and what kind of factors should be taken into consideration. An informal (intuitive) choice may lead to an increase in the number of tests in the selective experiment and to ineffective results in investigating the surface of response.

We used a statistical method of formalization of a priori information, which permits evaluating the comparative influence of the individual independent variables (factors) on the process of reduction [1].

A group of seven specialists has suggested ranking the X_i ($i = 1, 2, \ldots, 17$) variables: X_1 is the amount of hydrogen fed into the furnace, X_2 is the temperature of the third zone, immersed into the furnace, X_3 is the temperature of the second zone, X_4 is the temperature of the first zone, X_5 is the tenperature of the furnace tube, X_6 is the angle of slope of the furnace tube, X_7 is the rate of rotation of the furnace tube, X_8 is the humidity of the hydrogen supplied, X_9 is the temperature of heating the WO_3, X_{10} is the temperature of the shaking mechanism, X_{11} is the number of impacts of the shaking mechanism, X_{12} is the grain size of the immersed WO_3, X_{13} is the bulk density of the WO_3, X_{14} is the amount of oxygen in the WO_3, X_{15} is the amount of molybdenum in the WO_3, X_{16} is the length of the furnace condenser, X_{17} is the number of furnace temperature zones in accordance with the degree of

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--MATHEMATICAL MODEL OF THE CONTINUOUS STRIPPING OF SLAGS -U-

AUTHOR-(05)-LISOVSKIY, D.I., IVANOV, V.A., SHAPIROVSKIY, M.R., GOLUBEV, V.I., LYAPUNOV, I.D.

COUNTRY OF INFO--USSR

SOURCE--IZV.VYSSH. UCHEB. ZAVED., TSVET. MET. 1970, 13(1), 141-7

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MATHEMATIC MODEL, METALLURGIC SLAG, METALLURGIC PROCESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0149/70/013/001/0141/0147

PROXY REEL/FRAME--3005/0841

CIRC ACCESSION NO--AT0132931 UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132931

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROCESS OF STRIPPING THE SLAG IS DESCRIBED BY 11 MATH. EQUATIONS.

FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

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TITLE--STRIPPING OF SLAGS FROM THE SHAFT MELTING OF NICKEL ORES IN AN ELECTRIC FURNACE WITH COKE CONDUCTANCE -U-

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DEALS WITH THE EFFICIENCY OF THIS TYPE OF FURNACE IN THE FILTRATION OF MOLTEN NI SLAGS THROUGH COKE AND THE EFFECTS OF VARIOUS FACTORS ON SLAG STRIPPING. THE SLAG COMPN. WAS SIO SUB2 45, FEO 15, CAO 25, AL SUB2 O SUB3 8, AND MGO 6PERCENT. THE SLAG WAS CHARGED INTO THE FURNACE CONTAINED NI 0.06-0.14 AND CO 0.01-0.02PERCENT. THE COMPN. OF THE PPTD. FERRONICKEL FROM 2 DIFFERENT MELTS WAS NI 4.5, 12.8; S 2.15, 154; SI 0.0055, 0.034; CR 0.073, 0.056; C 4.63, 5.73; MN 0.14, 0.093; AND P 0.084, 0.092. AT HIGH COKE LAYER TEMPS., THE DEOXIDN. OF FE IS SIGNIFICANT, SO THAT THE NI AND CO CONTENTS OF THE FERRONICKEL ARE LOW. THE LATTER ALSO EXHIBITS LARGE AMTS. OF CR AND SI. THE EXPTL. MELTS INDICATE THAT THE EXTN. OF NI AND CO IS ASSOCD. WITH THE EXTENT OF DEOXION. OF THE FE, THIS BEING DETD. BY THE SLAF COMPN., THE ENTRY AND EXIT TEMPS. OF THE SLAG, THE SIZE OF THE COKE FINES FILTER, AND THE FLOW OF SLAG. CURVES ARE GIVEN SHOWING THE DISTRIBUTION COEFF. OF NI AND CO BETWEEN THE SLAG AND THE METAL PHASE AS A FUNCTION OF THE TEMP. THESE EXHIBIT WELL DEFINED MIN. AT 1275-1325DEGREES. THE INCREASE IN THE DISTRIBUTION COEFF. BELOW 1275DEGREES CAN EVIDENTLY BE EXPLAINED BY INADEQUATE SETTLING OF THE FENI PARTICLES RESULTING FROM THE HIGH VISCOSITY OF THE SLAG AND THE SMALLNESS OF THE SETTLING TANK. DECREASING THE COKE TEMP. DECREASES THE IMPURITY CONTENT IN THE ALLOY OBTAINED. THIS IS EVIDENTLY ASSOCD. WITH THE CONSIDERABLE REDN. OF CR AND SI OXIDES WHICH OCCURS DUE TO THE FORMATION OF HIGH POWER INCRO ARCS WHEN THE CONTACTS BETWEEN THE COKE PARTICLES ARE DISTURBED.

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CIRC ACCESSION NO--AP0132436

ABSTRACT/EXTRACT--AN INDUSTRIAL FURNACE OF FLOOR AREA 1.5-2.0 M PRIME2 IS CAPABLE OF ACHIEVING 50-60PERCENT EXTN. OF NI AND 40-5PERCENT EXTN. OF CO FOR A SP. POWER CONSUMPTION OF 50 KW-H4-TON SLAG.

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USSR

UDC: 669.295

IVANOV, V.A., KISHNEV, V.V., and LISOVSKIY, D.I.

"Investigation of a Commercial Process for Chlorination of Titanium Slags in a Melt by Electronic Modeling Methods"

Moscow, Tsvetnyye Metally, No 5, May 1970, pp 68-72

Abstract: Investigations were made of a commercial process for the chlorination of titanium slags in a melt with the help of an analog computer and equations expressing the reactions occurring during the chlorination process. To determine the parameters of the mathematical model of the chlorination process, dynamic characteristics obtained experimentally on the KgT-5 commercial chlorinator were used. It was established that the mixing conditions of such components as TiO_2, C, SiO_2, $FeCl_2$, and $FeCl_3$ in each of the chlorinator capacities are close to the conditions in an ideal mixing reactor. In investigations on the kinetics of the process, all melt samples were taken in the center of the chlorinator, where TiO_2 concentration equalled its average concentration throughout the entire melt. In continuous chlorination, the TiO_2 content in the melt was lowered to 1.6-1.8%, causing intense frothing of the melt which was stopped by increasing the slag charge. It was recommended that to decrease the titanium loss, the charge should be loaded in the center of the chlorinator, thus eliminating drops in TiO_2 concentration between chlorinator capacities and thereby lowering the value

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IVANOV, V.A., et al, Tsvetnyye Metally, No 5, May 1970, pp 68-72

of $C^{min}_{TiO_2}$. It was also established that owing to the intense mixing and high fusion level with TiO_2 content in the melt up to 0.7%, passage of chlorine in waste gases is absent. The amount of titanium tetrachloride formed in the chlorination process per unit of time is determined primarily by the flow of chlorine fed into the chlorinator and practically does not depend on the change of current TiO_2, C, $FeCl_2$ and $FeCl_3$ concentrations in the melt, and also in changes of the melt temperature and dispersed structure of the initial slag and petroleum coke. As a result of the identification of the real process and its electronic model, the structure and parameters of various operators were determined. Analysis of some equations showed that the consumption of the chlorine-air mixture and, consequently, the yield of $TiCl_4$ by the chlorinator, is limited not by the fusion level, but by the temperature in front of the bag filter in the condensation system. As a result of investigations on an analog computer, it was established that the mathematical model of the commercial process adequately reflects the basic features of the real process of titanium slag chlorination in a melt using a commercial chlorinator and, consequently, may be used for solving problems in automatic control.

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LISOVSKIY, E.V.

SOURCE: Radio & Electronics
INTER. CONF. ON MAGNETICS [illegible] April '71

TWO-STAGE PARAMETRIC EXCITATION OF THE MAGNETOACOUSTIC RESONANCE IN YIG DISKS BY PARALLEL PUMPING

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The results of S-band experiments on parametric excitation of magnetoacoustic resonance (MAR) in ferrite YIG disks with polished surfaces by parallel pumping are presented. The threshold power of the MAR excitation was some decibels above than that of spin wave instability. The excitation of elastic oscillations in disks with different size with the dc magnetic field applied parallel to the face of the disk is observed. In Fig. the threshold power of MAR as a function of the static magnetic field is presented ($\delta H = H_0 - H_c$, where H_0 is the applied static magnetic field, and H_c is the field, corresponding to the point of minimum threshold of subsidiary absorption by parallel pumping).

In the region of subsidiary absorption the excitation of MAR is accompanied by the phenomena, that resemble these, which take place at MAR excitation in the region of ferromagnetic resonance [1], that is, not longitudinal elastic waves are excited, but shear one, a great number of harmonics is observed, etc. The calculated values of the elastic resonance frequency for the main (the lowest) type of oscillation well agree with experimental one only with assumption that disks are hard fastened by the perimeter.

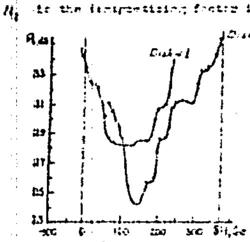
By means of the method of construction of isoenergy surfaces [2] it is shown, that on two-stage mechanism excitation of MAR the wave number of pumping wave is governed by the equation

$$k = \frac{\omega_a}{2 v_e} = k_{max}$$

(where v_e is the velocity of the elastic waves). For YIG the values of k_{max} are equal to $10^5\ cm^{-1}$, that is on two-stage MAR the "second" pumping wave is not exchange spin wave, but magnetostatic one. The region of the static magnetic field, where the two-stage MAR can exist, has the following limits

$$N_z M_s - 2\pi M_s + \sqrt{(2\pi M_s)^2 + (\omega/\gamma)^2} \le H_0 \le \omega/\gamma - N_z M_s$$

where N_z is the demagnetizing factor in the direction



Figure

of the static external magnetic field H_0. In Fig. the theoretical limits of MAR existing are shown by dotted lines. A good accordance with experimental data takes place.

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2. E.V. Lisovsky, Radiotechnika i electronika, [illegible], 8, 1511, (1969)

A [illegible]
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Wears glasses
Short perhaps 5'5" [illegible]
Fair